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TRANSFUSION.*

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IT is not to be expected that this operation would have found much favor prior to the discovery of the circulation of blood in 1628, and yet we come across so many mentions of it in ancient writings that we are fain to admit that the idea of reanimating the vital forces by the introduction of healthy blood into the system has been a familiar one in all ages of the world. Whether transfusion was ever practised before the 17th century, we have good reason to doubt, in spite of the affirmative testimony to be derived from many incidental references in old manuscripts.

The ancient Egyptians are said to have employed this means to cure their princes. An old Jewish document records the fact that "Naam, prince of the army of Ben-Adad, King of Syria, when attacked with the leprosy, applied to his physician, who, to effect a cure, removed the blood from his veins and replaced it with other blood." Medea is represented by Ovid as offering to restore youth and strength to Pellias by replacing his aged blood with that of a young man.

Without discussing the credibility of these and similar statements, we may pass on our historical Pegasus over the Great Dismal Swamp of the middle ages without drawing rein until we reach the 17th century. In its early years, we again find attention directed to this method of treatment, but it was not until the year 1665 that Richard Lower, an Englishman, first published a complete description of the procedure to be followed in transfusion, and performed the operation upon animals. Stimulated by the accounts of his success, Denys, professor of philosophy and mathematics in Paris, after repeating the experiments on animals, at length, in two instances, successfully transfused a lamb's blood into the human circulation. The publication of his results gave rise to the most violent excitement in Paris. One party "laid claim to the discovery of a universal remedy which would restore health, youth and vigor, assuage diseases of the mind, calm the most violent dispositions, and might even prolong life beyond its natural term." Their opponents contended that not only were these pretensions false, but that the operation was always dangerous and sometimes fatal.† Laury, for instance, an eminent surgeon, maintained that certain particles of the blood were distributed to nourish certain

* Read at the Annual Meeting of the Massachusetts Medical Society, June 3, 1874.

† Cyclopædia of Practical Medicine. Article, Transfusion.

parts of the body, and asked what would become of those ingredients of the blood which nature intended should produce the horn of a bull, if a bull's blood were introduced into the human circulation. He also thought that the stupidity and low instincts of the animal would thus be transmitted to the man. The latter party finally prevailed by unfair means, and caused the operation to be interdicted in France, unless done with the approval of a member of the Faculty of Paris.

Upon receiving this blow, transfusion again sank into oblivion, not only in France, but in other countries.

In 1818, the great obstetrician, Blundell, revived the operation in England, and clearly demonstrated its beneficial effect in persons sinking from excessive hæmorrhage. His statements found an echo on this side of the Atlantic, in a paper written by Dr. Walter Channing, of Boston, published in the first volume of the Boston Medical and Surgical Journal, in which he strongly recommends transfusion, without, however, having practised it himself.

From that time down to the present day, transfusion has had a struggle to retain its place among the recognized resources of surgery. Milne-Edwards, Diffenbach, Bischoff, Polli, Nicholas, all strove to elevate it to a legitimate position, but it has only been during the last few years that its claims have been admitted. This result has been principally achieved by the writings and researches of Oré in France, Gesellius in Russia, Hasse in Germany, Aveling, McDonnell and Higginson in England. A fresh impulse to the study of transfusion, and to its more extensive employment, was given about a year ago by the report of a successful case made to the Obstetrical Society of London, by Dr. Aveling, and the exhibition of a very simple instrument, by means of which the blood can be transferred directly from vein to vein without the defibrination which has heretofore proved the greatest bar to its general adoption. Since then, English, French and German journals have been teeming with reports of cases, experiments, &c.

Having thus briefly glanced at the checkered history of transfusion, let us consider some of its physiological bearings. Writers upon this subject have all failed to emphasize the great distinction between the classes of cases to which the operation is applicable, and have, consequently, lost sight of the special and different indications which call for the operation in each of these classes. It will be the chief object of this paper to set forth the elementary physiological principles on which transfusion must rest, and then deduce from them some rules to guide us in the employment of this method of treatment. We all know that transfusion has been performed in acute anæmia consequent upon excessive hæmorrhage, in cholera, phthisis, cancer, chlorosis, mania, dysentery, pyæmia, septicæmia, &c. I propose to divide the cases in which transfusion may be practised, with a reasonable prospect of benefit, into four groups, basing the distinction upon universally accepted views as to the constitution of blood in health as compared with that in the various diseases which result in an altered condition of the fluid. I suggest this classification as the only one possible in the present state of science, but I foresee and predict that further researches of physiologists will render a much closer discrimination possible, and lead to a much more rational use of transfusion. Let us take up each class separately.

First, a patient, most often a woman after childbirth, has profuse

hæmorrhage; she lies motionless, moaning, bathed in a cold sweat; her pulse cannot be felt; the heart beats feebly, and threatens to cease at any moment; stimulants fail to arouse the vital forces, and we turn to transfusion as the only remaining resource whereby to rekindle the flickering spark of life. How, then, does transfusion effect this result? The first and essential indication is to keep the heart beating; but, before we can expect to accomplish this, we must understand clearly why its action is failing. Here, I believe, authors have been at fault in overlooking the chief factor. They have, so far as I know, all sought to ascribe the enfeeblement and ultimate arrest of the heart's action to the cerebral anæmia and the consequent withdrawal of the necessary stimulation. If my theory, however, is correct, the heart ceases to beat, in a great measure, under the influence of a purely physical law. Before it can contract, the heart must dilate, but this it cannot do unless the afferent veins are in condition to pour into its cavities the needed supply of blood. If they are empty, and cannot fulfil this requirement, the heart is held in a stronger than giant's grip. This condition is not produced in a moment of time; as the blood escapes from the peripheral vessels, a gradually diminishing amount returns to the heart, and thus its dilatation is more and more impeded, and, finally, its action altogether arrested. To meet this emergency, the infusion of any innocuous fluid into the vessels would suffice to free the heart from bondage, but physiology now steps in and claims for the organism a constant distribution of oxygen throughout its numerous members, and an equally uninterrupted removal of carbonic acid; these failing, we have asphyxia and speedy death. These two processes are carried on by means of the red blood corpuscles; if they are not circulating in sufficient numbers, the relative proportion of oxygen and carbonic acid in the system is disturbed, the brain consequently ceases to perform its functions, and the heart to beat. I do not mean to imply that the two laws, adduced to explain the cause of death after excessive hæmorrhage, act independently of each other. The influence of both is undoubtedly felt from the outset; but I do assert that neither can be disregarded in studying this question. Some authors strive to explain the good effect of venous transfusion by supposing that the blood "goes direct to the heart, which is stimulated to increased action by the presence of its natural stimulant;"* this explains nothing. Other processes are unquestionably carried on by the blood in its circuit, but we know of none whose interruption is immediately followed by ominous symptoms or death. They may, therefore, be practically overlooked in this category of cases. We thus have two indications to fulfil: first, fill the vessels with a fluid, so that the heart will not have to struggle vainly against one of nature's physical laws; and, secondly, let that fluid contain enough blood corpuscles to dispense oxygen and remove carbonic acid throughout all parts of the economy, in quantity proportionate to their several needs. It is evident that blood alone will meet those requirements. The presence or absence of fibrin, which has been much discussed from a physiological standpoint, is clearly of no importance, so far as the immediate demands of the system go, unless it is needed to preserve the viscosity of the blood as essential to its steady circulation—to ensure the integrity of the red corpuscles—or to prevent serous exudations. These

* Dr. Madge, in Obstetrical Journal of Great Britain, ii. 2, p. 128.

possible dangers have not been satisfactorily demonstrated as facts, so that I may venture to say that, provided coagulation of fibrine can be prevented during the blood's transit from one vascular system to the other, we may practically ignore the mooted question of defibrination.

In the second series of cases, I include those diseases such as cholera, dysentery, perhaps anasarca and other serous effusions, in all of which the watery elements alone are extracted from the blood; the vessels then partially collapse, and the heart, as before, falls a prey to nature's abhorrence of a vacuum. Many of the nutritive ingredients of the blood may, unknown to us, be lost with the serum; but the blood corpuscles remain, as does our ability to resuscitate the patient, if we can provide a means of carrying them on their errands throughout the system. Inject any fluid which will not destroy the integrity of the blood corpuscles and the patient is saved from the immediate danger. This explanation accounts for the great revival reported from the infusion of salt and water in the prostration of cholera; clear water having been shown to cause the blood corpuscles to swell, and, finally, become disintegrated. The ultimate death of most such patients, after a real, though temporary improvement, would rather indicate that the salt and water had some subsequent deleterious influence, the effect of which does not declare itself for a day or two. With a view to the permanent recovery of these patients, it will, therefore, be advisable to inject blood, until physiologists have discovered an artificial serum, devoid of all harmful properties, or until it should be found that the mass of blood corpuscles is made by transfusion so excessive as to render the blood too thick to circulate freely.

The third class embraces all those cases in which, through some occult failure of the digestive, absorptive, assimilative, or other vital processes, the blood is so wanting in nutritive elements as to be unfit to make good the waste of tissue throughout the economy. Transfusion is here resorted to for the purpose of supplying a fluid that contains every kind of food, which the system requires. I especially include every nutritious constituent, because the present position of science rarely enables us to penetrate so deeply into the mysteries, even of our physical nature, as to determine what special element is wanting to restore the blood to its normal composition in any given disease. Blood is again the only fluid which, as far as our present knowledge goes, will meet the wants of the system. The question of defibrination now assumes a vital importance, and its permissibility depends upon whether we accept the doctrine that fibrine is only one form of albumen, and thus a nutriment, or agree with other physiologists, who are led, by "its absence from the blood which has passed through the great depurating organs of the body,"* to regard it as a purely excrementitious element; in the latter case, its removal from the blood to be infused becomes an act of purification, and renders the blood better fitted to perform its functions. This last argument loses much of its force, however, when we reflect that the same office of defibrination is, by the admission of those who lay stress upon this point, thoroughly effected by a single passage of the blood through one of these depurating organs.

The fourth and last category contains those cases in which, owing to the inefficient performance of the eliminative functions, or to the

* Dr. R. McDonnell. Obstetrical Journal of Great Britain, i. 8.

introduction of injurious matter from without, the blood is so charged with noxious elements as to poison all the parts of the system through which it flows. Here our chief aim is, not to put anything into the circulation, but to take from it these pernicious ingredients. Uræmia, pyæmia, septicæmia, perhaps cancer and others, play the chief rôle among these diseases. We must remove the poison by some means, before it destroys life; this might be accomplished by banishing the source of contamination, by promoting the elimination of the poisonous substances through the natural excretory organs, by introducing into the circulation an antidote which would render the noxious elements harmless, or, finally, by substituting a healthy for an unhealthy blood, thus getting rid of the infectious ingredients. All these methods have often been known to fail; the last has been proposed as offering theoretical advantages, but I cannot learn that transfusion has proved of permanent benefit in such cases.

To sum up: Healthy blood is—physiologically speaking—the best fluid for infusion in every class (except, possibly, in the second) where the treatment is to be directed at increasing or bettering the circulating medium; but, as fresh human blood is not always to be obtained at a moment's notice, it may be well to consider whether other fluids may be used with any prospect of success. Animal blood comes up as the most natural substitute, and has been fully tested by many observers. Quite recently, Hasse, in Nordhausen, has published thirty-nine cases in which lamb's blood was transfused into man; his results showed marked improvement in fifteen cases, temporary relief in thirteen, no improvement in two, and one immediate death. Such results appear to refute conclusively the experiments and theories which would make animal serum a solvent of human blood corpuscles, or represent animal corpuscles as incompetent to carry oxygen and carbonic acid in the human circulation, because they differ in shape and size from human corpuscles. It is certainly a wise precaution always to select, as the blood-donor, a lamb or a dog, since in them the corpuscles are smaller than in man.

In the first category, blood is evidently indispensable for tranfusion, because blood alone contains the corpuscles required to distribute oxygen or remove carbonic acid. It would also seem fruitless to seek for any artificial substitute in such instances. It is different, however, with the second class, where a harmless fluid only is requisite. Experiments directed to solve the problem here involved are likely to succeed. In the third class, we practically seek to introduce already digested and perhaps assimilated food, thus relieving exhausted nature from the task of performing the process. The circulating fluid is probably not much reduced in volume, so that, before infusing new blood, we must remove some of the old, or a dangerous state of general plethora may result. Again, in this class, as in the fourth, a single transfusion, though occasionally giving nature time to rally its forces and thus turn the scale, more often fails to be crowned by marked success or failure. The cause of the depraved or contaminated state of the blood is apt to be still acting, so that the operation must be often repeated if we are to hope for a permanent good result; a single meal of digested food thus introduced, or a single abstraction of poisonous matter, avails but for the moment.

Having thus briefly shadowed forth some of the general physiologi-

cal laws on which transfusion is based, I will proceed at once to discuss the operation and the principal methods employed.

The immediate effect of injecting blood into the veins is varied; the veins swell, the skin of the arms becomes red, perspiration forms upon the face; dyspnœa and a feeling of fulness in the abdomen soon succeed the earlier symptoms. Sometimes there is vomiting, an irresistible inclination to go to stool. Finally, headache, giddiness and fainting. Pain in the back is invariable, often persisting for several days. Shivering and a rise of temperature of several degrees take place within an hour of the operation. Later, a profuse perspiration and sound sleep, from which the patient awakes much refreshed and strengthened. Albumen and hæmatin are sometimes found in the urine on the following day, but no blood corpuscles.

Dr. Madge* has formulated the principal methods as follows:—

1. Transfusion with defibrinated blood.
2. Mediate transfusion with pure blood.
3. Immediate transfusion from vein to vein.
4. Immediate transfusion from artery to vein.

1. Transfusion with defibrinated blood has thus far been the method most in vogue, its chief English advocate being Dr. Robert McDonnell, of Dublin. He regards defibrination as an essential condition, for the physiological reasons already cited, but more especially because of the rapid coagulation of pure blood and the consequent liability to the formation of small emboli, to which he attributes, rather unjustifiably I think, all the deaths which have occurred within a few days after the operation. Moreover, it has been shown that very small coagula almost invariably form, even in blood that has been whipped and strained, and that the corpuscles in such blood adhere together in rolls, and are, not improbably, altered by the treatment to which they have been subjected. Finally, it may be objected that of seventy transfusions with defibrinated blood, only eighteen have been successful.† Dr. McDonnell has operated in several cases, with three or four favorable results. His procedure is to catch the blood in a basin, and whip it with a stick, or better still on the grounds of cleanliness, with a glass rod. In two or three minutes, the fibrine is found adhering to the rod, when the blood must be strained several times through fine linen. It is then ready for use, and is placed in a glass cylinder, capable of holding six ounces, shaped like a syringe, but devoid of a piston; to the nozzle is affixed a long rubber tube, with a canula at its extremity for insertion in the vein. The blood is driven into the vein by gravitation, aided by a small propelling bulb in the middle of the tube, and the occasional gentle blowing of the operator, with his mouth applied to the open top of the cylinder.

2. Mediate transfusion with pure blood has been performed by Mr. Higginson, of Liverpool, in fifteen cases, of which ten were successful. His instrument resembles a syringe, but is bulky, owing to the precautions taken to keep the blood and the instrument warm, and to prevent the entrance of air into the vein. These contrivances would seem superfluous, in view of the recent discovery that heat promotes coagulation, and cold retards it. The entrance of air into the veins is, moreover, not now regarded with the same apprehension as of old,

* British Medical Journal, January 20, 1874.
† Gesellius. Die Transfusion des Blutes, p. 109. St. Petersburg, 1873.

for Oré has shown that, although a large quantity of air, forced into the femoral vein of a dog, will cause death in a few minutes, a small quantity may be introduced with impunity.*

3. Immediate transfusion from vein to vein has been revived and perfected by Dr. Aveling,† whose instrument as he very justly remarks forms an anastomosis between the circulatory system of the two individuals (they become Siamese twins for the time being). It consists of a rubber tube, about a foot long, with a bulb at the centre. Two canulæ are inserted into one of the larger brachial veins of the patient and of the blood-donor respectively—the former being directed toward the heart to discharge the blood, and the latter toward the periphery so as to receive it. There are no valves to the pump, for fear they might become centres for the formation of fibrinous clots; as a substitute for them, the finger and thumb of the left hand are made to compress the tube on one or the other side of the bulb, according as the bulb is expected to forward its contents toward the patient or to re-fill itself from the veins of the donor. Before being affixed to the canulæ, the tube is filled with warm

* Etudes sur la Transfusion du Sang. Paris, 1868.
† Obstetrical Journal of Great Britain, i. 5 and 6.

water, so that the first syringeful injected is pure water; this has not proved deleterious. This process is repeated as often as is thought desirable, the amount of blood transfused being gauged by the number of times the pump is emptied, its capacity being two drachms. This procedure of Dr. Aveling's has been seven times successfully applied in England, and it certainly offers more advantages than any of the others. These advantages are thus stated by the author:—

a. The exact quantity of blood required is taken from the donor, and no more.

b. No delay is caused by previous complicated manipulations of the blood, it being allowed to pass from vein to vein physiologically unchanged.

c. The chances of coagulation are small, because the blood is removed from the action of the living vessel for only a few seconds, and glides smoothly through the India-rubber tube, without being exposed to the air.

d. The apparatus is effective, simple, portable, inexpensive, and not likely to get out of order.

e. The operation is safe, uninterrupted, and a close imitation of nature.

4. Immediate transfusion from artery to vein is the oldest form, and was not, at the outset, very difficult, as the early operations were confined to animals. The direct transfusion of the arterial blood of a lamb into the veins of a human being is illustrated by the cases of Dr. Oscar Hasse,* already referred to. He claims that lamb's blood is preferable to human as being stronger and more stimulating. No one has yet been bold enough to recommend, or practise the opening of an important human artery for the purpose of arterial transfusion. The advantage of arterial over venous blood seems questionable, when we consider that the blood injected, before being distributed throughout the system, is oxygenated and decarbonized by its passage through the lungs, and is thus virtually arterial before it is called upon to perform its functions.

One point, and I have done. The quantity of blood transfused at one time should not exceed six or eight ounces, no matter how great has been the hæmorrhage, or how profound the prostration; larger quantities, though not always harmful, have, on one or two occasions, proved fatal, and at the autopsies the cause of the death has been attributed to plethora.

In conclusion, I would disclaim all desire or qualification for pursuing the study of this subject into the more abstruse physiological processes, but have merely sought to make out a rough chart for the use of future investigators.

DR. SIMBAT, in the *Thèses de Paris*, 1874, No. 73, shows the good effects which may be obtained by the use of Canquoin's paste in the treatment of fistula, and particularly in the use of anal and even urinary fistula. The chloride of zinc is employed with advantage in the treatment of fistulæ, in consequence of the granulating power it imparts to their walls; by reason of the facility with which it is applied; also in consequence of the absence of the accidents which might accompany wounds from cutting instruments; and, lastly, because it is more likely to prevent recurrence of the evil than other methods of operation.—*London Medical Record.*

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* Vide Allgemeine Wiener Medizinische Zeitung for December, 1873.

Progress in Medicine.

REPORT ON MEDICAL CHEMISTRY.

By Edward S. Wood, M.D.

[Concluded from page 12.]

Toxicology.

Analysis for Hydrochloric Acid in the Stomach.—The detection of *free* hydrochloric acid in the stomach is, as is well known, extremely difficult on account of the presence of combined chlorine, which exists normally in the tissues. The method proposed by L. Bouis (*Annales d'Hygiéne*, April, 1874) for accomplishing this object consists in the formation of free chlorine by adding the binoxide of manganese, and gently heating. The chlorine, which is formed with free hydrochloric acid, and not with common salt or a chloride, is recognized by paper moistened with a solution of iodide of potassium and starch paste, which is colored blue by the chlorine. The absorption of chlorine by the organic matter sometimes prevents its detection in this way, hence another method is also recommended to be used in connection with the above. This process depends upon the fact that nitre heated with free hydrochloric acid will produce aqua regia, while if heated with common salt or a metallic chloride no such change will take place. The presence of the aqua regia is recognized by its solvent action on gold leaf, and from the amount of gold dissolved can be calculated the amount of free hydrochloric acid present. Chlorate of potassium acts in the same manner as the nitre. If the liquids are too dilute, they can be concentrated by evaporation on a water bath. By the last method the author has been able to recognize several centigrammes of hydrochloric acid in a large quantity of fluid.

Poisoning by Arseniuretted Hydrogen.—Nine cases of poisoning by this gas (three of which were fatal) are reported in detail in the *Vierteljahrschrift für Gericht. Medecin* (April, 1873), by Dr. Frost. These cases add materially to our knowledge of poisoning by this form of arsenic, since there are so few cases on record.

These persons were poisoned by inhaling the gas which was set free in a new process for extracting silver from metallic lead. This process consisted in causing the silver to combine with zinc by introducing the latter metal into the melted lead. The compound of the zinc and silver rises as a scum to the surface and is removed. The silver is then obtained by treating this compound with hydrochloric acid, which forms the soluble chloride of zinc, and the insoluble chloride of silver, from which the metallic silver is obtained in the ordinary way. It was found necessary to constantly stir the mixture of metal and acid. The action of the acid upon the zinc forms nascent hydrogen, which will combine with arsenic, if any be present, just as in Marsh's apparatus. The arsenic in this case was derived not only from the lead and zinc (which frequently contain it as an impurity), but also from the hydrochloric acid, which, upon analysis, proved to contain a large quantity (0.027 per cent.).

Some of the workmen were affected on the first day, others not till the second. All who were engaged in the operation of stirring were affected.

Those who recovered were affected during the first two days with loss of appetite, nausea, dizziness, gaseous eructations, sweet taste in the mouth, tremendous pain in the limbs, yellow appearance of the skin and conjunctivæ, narcotic sleep, from which the patient could be roused quite easily, a sensation of weariness in the legs, bloody urine and bloody stools. On the third day, the patients were found in a deep sleep, with jaundice, high temperature, pulse 100 and more, difficult respiration, tongue dry, and covered with a white coat. On being roused, the patients complained of an intense pain in the head, a dirty taste in the mouth, great thirst, and excessive pain during micturition. The somnolent condition lasted about five days; the pain during micturition lasted three or four days, when the urine gradually became free from blood, and the jaundice began to disappear in four or five days. The patients were confined to their beds for two or three weeks, and could not resume work for several months.

In the fatal cases, the same sensations in the limbs were perceived, and there were, also, headache, nausea and vomiting, fluid stools, bloody urine, jaundice, small and rapid pulse (150–160), delirium and stupor, from which the patient could be roused, and death, which took place in one case in a little more than twenty-four hours after the commencement of the symptoms, in another in about two days, and in the third case in five and one-half days.

At the autopsy, a dirty yellow coloration was noticed in the skin and all of the tissues. In one case, a garlicy odor was evolved from the fluid which flowed from the mouth and nose; a thin layer of bloody serum covered the arachnoid; the large vessels contained a little dark blood; the kidneys were congested, and dark-red in color, and the bladder was empty, or nearly so. In one case, a patch of the mucous membrane of the stomach, about two inches square, upon the posterior surface had a dark-gray appearance, and was easily raised from the sub-mucous tissue.

Arsenic was detected in all of the tissues and fluids which were submitted to analysis, in the stomach, blood, fluid which flowed from the mouth, kidneys, heart, lungs and bronchi. Arsenic could not be detected in the urine of one of the patients who recovered.

Acute Poisoning by the Chromate of Lead.—Two fatal cases of acute poisoning by chrome yellow are reported in the *Vierteljahrsch. für Gericht. Medecin* (Jan., 1874), by Dr. von Linstow. These cases occurred in children, aged, respectively, 1¾ and 3½ years, and the poisoning was caused by sucking an unknown number of small, yellow substances, which had been used for ornamenting pastry, and which consisted of gum tragacanth and chrome yellow. A piece measuring 13+5 millimetres yielded, on analysis, 0.278 grm. of gum tragacanth, and 0.0042 grm. of chromate of lead.

Chromate of lead, on account of its insolubility, has never been considered an active poison, and the fact that it is used so largely as a pigment for coloring not only ordinary substances, but also children's playthings, and even articles intended for food, such as confectionery, &c., renders these cases of more than ordinary interest. The extent of its use in confectionery can be seen by an examination of the report of analyses of confectionery, by H. B. Hill (*Mass. State Board of Health Report*, 1873, p. 390). Thus 77 samples, both white and colored, were analyzed; 21 were colored yellow, and in 17 of these the pigment

consisted entirely of chrome yellow, in 2 partially; of 12 specimens which were of an orange color, the pigment in 9 consisted entirely of the chromate of lead, and in 2 partially; 7 specimens of green were examined, 6 of which contained chrome yellow mixed with Prussian blue in five specimens, and with Scheele's green in the other. Of the 77 specimens examined, 36, therefore, contained the chromate of lead.

The symptoms of poisoning did not commence until several hours after the ingestion of the chrome yellow, which took place between 9 and 11 A.M. Both children were taken sick at the same time (between 2 and 3, P.M., of the same day) with vomiting, which lasted for several hours. The vomitus was yellow in color. There was great prostration and extreme thirst, but no diarrhœa and no pain. On the second day, both had a hot and red countenance, and were stupid. The younger, about twenty-four hours after the commencement of the symptoms, had a slight diarrhœa and convulsions, which continued until death, which took place in forty-eight hours. On the third day, an erythematous eruption appeared on the chest and abdomen of the elder. He was dull and stupid, and the temperature in the axilla was 39.5°C. On the fourth day, the pulse and respiration became irregular, the breath extremely fœtid, stupor and unconsciousness came on, and the patient died five days after the ingestion of the poison.

After death, the mucous membrane of the stomach and duodenum was found swollen and loose, so that it could easily be raised from the sub-mucous tissue; it was inflamed, as was also that of the œsophagus, throat and larynx. In some places, the mucous membrane of the stomach and duodenum was entirely destroyed, and in one spot perforation had taken place, showing that the chrome yellow had a corrosive action. These appearances were probably not caused by the chromate of lead, as such, but by soluble compounds formed after the pigment had lain in the stomach some time, and had been decomposed.

Besides the above appearances, there were found also hyperæmia of the brain and its membranes, beginning fatty degeneration of the liver, commencing icterus, hyperæmia of the kidneys, suppurative pyelitis, and a softened spleen; conditions which are often seen after death from poisoning by other corrosive poisons.

The number of these yellow ornaments ingested by the children could not have been more than six, since only seven were given them to play with, and one was afterwards recovered. If each child had eaten three of these, the fatal dose was less than 0.01 grm., or between $\frac{1}{5}$ and $\frac{1}{6}$ of a grain of the chromate of lead.

The Action of Alkaloids on Albuminoid Substances.—By M. Y. Rossbach (*Neues Repert. für Pharm.*, xxii. 512–544).

Experiments were undertaken to explain the action of the alkaloids in diminishing the oxidation in the body, and it was found that, by the addition of neutral salts of the alkaloids (salts of quinia, strychnia, veratria, morphia and atropia were used) to solutions of egg albumen, the temperature required for the coagulation of the latter was lowered very much; that solutions so dilute that no turbidity was produced by boiling the aqueous solution became turbid at 59°–62° C., when a trace of a neutral salt of an alkaloid was present; that more turbidity

was produced by heating solutions of albumen if an alkaloid were present than with the simple aqueous solution; and that this altered coagulability is due to a true chemical combination taking place between the alkaloid and the albumen. The compound formed has the properties of an alkaloid. No combination takes place between 1° and 10° C.

The same results were produced with the blood serum, and the juice of muscle, and it is concluded that dissolved albumen is converted by the alkaloids into a less soluble substance, which is a compound of albumen with the alkaloid.

The alkaloids were also found to unite with hæmoglobin, but they do not prevent it from acting as an ozonizer. They do, however, seem to bind the oxygen more closely to the hæmoglobin, so that it is not given up so readily to other bodies.

Carbolic Acid.—By E. JACQUEMIN *(Journ. de Pharm. et de Chim.*, Feb. 1874).

On account of the many uses to which carbolic acid has been applied, and the increasing frequency of cases of poisoning, the author has made experiments to obtain easy methods for its isolation and detection.

In addition to the ordinary tests, the odor, coagulation of albumen, the formation of picric acid by means of nitric acid, the blue color formed with the sulphate of iron, &c., the author recommends another, which is far more delicate. It depends upon the formation of the erythrophenate of sodium (a blue substance which possesses very strong coloring power) by adding to the suspected fluid a drop of aniline and then chlorinated soda. A blue color is the result. This test will detect one drop of carbolic acid in two litres of water, a dilution of about one part in 66,000.

In separating the acid from the tissues and fluids, M. Jacquemin dispenses with the process of distillation as recommended by Dragendorff. The blood, for example, is treated with a two per cent. solution of sulphuric acid for an hour, strained, mixed with an equal volume of alcohol (90°), and filtered. To about 30 cubic centimetres of the filtrate, sodic carbonate is added to neutralize the sulphuric acid, then a part of a drop of aniline, and, finally, some chlorinated soda; this will mix irregularly with the fluid, and produce the blue color at the bottom of the vessel first; upon stirring, the whole fluid will become colored.

DUFOUR ON PREGNANCY WITH PERSISTENT HYMEN.—M. Dufour *(Archives de Toxicologie*, June, 1874) was consulted by a lady for some abdominal enlargement. On feeling the tumor, the movements of a child were apparent. On proceeding to make a vaginal examination, his finger was prevented from entering the passage by a complete circular band, which ocular demonstration proved to be the hymen. In leucorrhœa, the parts sometimes become much relaxed, and rendered thereby very dilatable, so that, under certain circumstances, the act of coitus may be completed without any rupture of the hymen. In this case, the patient said that she had never suffered from the "whites," and this was substantiated by the condition found.—*London Medical Record.*

Bibliographical Notices.

Annual Report of the City Registrar. Boston. 1874.

THE annual report of the City Registrar, with its complicated arrangement of births, marriages and deaths, has just been received. As this is the first report which has been published since the establishment of the Board of Health, its appearance has been anticipated with considerable curiosity by all interested in the sanitary welfare of the city.

The Board of Health was established just at the close of the year 1872, and the City Registrar's report for that year showed that the death-rate in the city was 30·5 in a thousand. When it is remembered that the average death-rate for the city for the ten years ending 1869 was only 23·7, the high rate reached in the year 1872 was of itself sufficient proof of the necessity for some change in the administration of the health department at City Hall.

In accordance with the demand for a change, as expressed by the ballots thrown by the voters in the municipal election of 1872, the Board of Health was created, and at once a change for the better took place. The death-rate for the year 1873 has fallen to 28·45 in a thousand. This rate is, of course, far from satisfactory, but it must be remembered that the epidemic of smallpox was not fairly under control until March, the deaths from that disease *alone* in January and February amounting to 266. Moreover, scarlet fever has prevailed in the city to a degree far in excess of that known for many years past, the number of deaths being 474, or an increase of 216 over the number recorded in the preceding year. It is also well known that when, owing to the occurrence of any epidemic like smallpox, cholera, &c., the death-rate of a city is largely increased, the return to its average ratio is gradual, owing, probably, to the general depreciated health of a large proportion of the population.

Taking into consideration, therefore, the prevalence of smallpox during a portion of the year, the presence also of what might almost be considered an epidemic of scarlet fever during a considerable part of the whole twelve months, and the generally depreciated sanitary condition of the inhabitants, as the result of the smallpox epidemic of 1872, it is not to be wondered at that Mr. Apollonio, at the close of his report, congratulates the city on the manifest improvement in the machinery employed to carry on the sanitary police department of the city, which he justly considers has been energetically and intelligently conducted.

It is a matter of regret, however, that the report should contain a number of important errors, as well as some serious misstatements. As an example of the former may be cited (p. 21) the phrase "more than *half*," which should read "more than *quarter*;" also (p. 53) the statement made that "in *two years* only (1853 and 1854) within the last 25 has the death-rate reached the present one (28·45)," which should read "in *three years*, &c.," since in the same paragraph the figures show that in 1872 the death-rate reached 30·5. As examples of misstatements or misrepresentations, unintentionally made, of course, but still calculated to mislead the reader, may be quoted the statement (p. 53) that scarlatina did not exist to any greater extent during the year (1873) than for a number of years past, while in another place (p. 38), the same writer states that this disease was *very prevalent*, the number of deaths being nearly *double* what it was in the preceding year. Again (p. 17), the total number of deaths each quarter of 1872 is omitted, the "percentages" being erroneously printed under the column-heading of "totals," and below occurs a statement which would convey a wrong impression to a hasty reader, namely, that "the mortality during the first quarter was nearly 6 per cent. greater than that of the same period of the preceding year." True, but why not state the reason, namely, that that quarter witnessed the decline of an epidemic (smallpox), which did not exist during the corresponding quarter of 1872? The rest of the year, the number of deaths was

less than in the rest of the year with which comparison is made, *the rate of mortality constantly decreasing from the time when the smallpox epidemic ceased.* Again (p. 14), he states that there were, leaving the deaths from smallpox entirely out of the question, 215 deaths in favor of the mortality of 1872 over that of 1873; but he forgets that, further on, he accounts for this by the statement (p. 38) that the deaths from scarlet fever numbered 216 more in 1873 than in 1872.

It is sincerely to be regretted that one who so evidently wishes to add his testimony to the good results which have followed the establishment of the Board of Health should, through errors of judgment and observation alone, have prevented the figures of his own report from being rightly interpreted. Had he simply presented those figures without any remarks or reasoning of his own, the subject of the high death-rate of the city would not have assumed the serious aspect alluded to by him in the general remarks with which he closes his report. It is only when he begins to reason falsely from erroneous statements that he becomes alarmed about the death-rate, which, owing to the careful management of the Board of Health has, in one year, been reduced from 30·6 to 28·45, and this, too, notwithstanding the existence of serious obstacles.

PERFORATION OF THE RECTUM BY FOREIGN BODIES, COMPLICATED WITH STRANGULATED HERNIA.—A policeman, aged 50, was admitted into St. Mary's Hospital, London, during the evening of March 30th, on account of a large, strangulated inguino-scrotal hernia. The hernia was reduced, with some trouble, but the abdominal distress and vomiting continued throughout the night, and by noon of the next day (31st) the ejected matter had assumed a stercoraceous character, and symptoms of severe peritonitis had supervened. At a loss to account for these distressing symptoms, a more careful examination was instituted, in the course of which, the surgeon, having inserted his finger into the rectum, struck a round mass, about the size of an apple; this he extracted, together with another similar mass, which proved to be pieces of flannel rolled into balls. Two other harder masses were then reached, which, having been brought away by means of enemata, turned out to be pieces of soap, each about three inches long, by two inches in breadth and depth. Soon after this, the patient became suddenly worse, complained of excruciating pain in the lower part of the abdomen, sank rapidly into a state of collapse, and died the same evening. At the necropsy, the abdominal cavity was found to contain a considerable quantity of sero-purulent fluid, and the intestines were glued together by recent lymph; the peritonitis had been general, but most intense in and near the hernial sac. On looking into the pelvis, a considerable amount of fæcal matter was found extravasated through a round, ulcerated opening in the upper part of the rectum, while lower down was another slough, just on the point of giving way; the mucous membrane of the rectum was of a very dark color throughout, almost in a state of gangrene. The presence of these foreign bodies in the rectum was ultimately accounted for in the following way. When going out for night duty, on the evening of the 28th, he was suffering from an attack of diarrhœa, and, to stop this, he inserted the pieces of soap, being anxious not to soil his uniform; the soap proving ineffectual, he afterwards inserted the two pieces of flannel, which seem to have the desired effect, and to enable him to finish his allotted term of duty. The substances thus inserted he was unable to remove, and during the following day (the 29th) he had pain in the lower part of the abdomen, and vomited. The retching, excited by the presence of the foreign bodies in the rectum, appears to have caused an unusual amount of the intestine to be forced down into the hernial sac, which had existed for several years, and hence strangulation ensued. Peritonitis then set in from the double starting-point of the strangulated hernia and the inflamed and distended rectum. The perforation of the intestine, which was found to be about eight inches from the anus, was probably the result of ulceration, caused by one of the angles of the pieces of soap.—*British Medical Journal*, May 9, 1874.

Boston Medical and Surgical Journal.

BOSTON: THURSDAY, JULY 9, 1874.

FROM the report of the committee having in charge the hospital Sunday movement, we learn that the subscriptions have exceeded somewhat the sum of $13,000. Of this, about $2,000 went to institutions specially designated by the contributors, and the balance was distributed by the committee on a plan which had in view the amount of "board and treatment given gratuitously by the hospitals during their last financial year." The amount of the subscription is perhaps not so large as the enthusiastic supporters of this movement might have hoped for, nor is it possible that the friends of the various hospitals and dispensaries which have been recipients of this charity will be perfectly satisfied with the plan adopted by the committee in distributing the fund. It is hardly to be expected that a project of this kind, totally new to this country, could at the outset have achieved a brilliant success. Still, we cannot think that even the strongest opposers of this movement will deny that the committee has, on the whole, performed a difficult task discreetly, as impartially as it was in their power to do, and in a manner creditable to its members.

The true measure of success in such a movement is not, however, to be found by reckoning the number of dollars actually contributed to the various recipients of this charity, but should be sought for rather by observing to what extent these charities have been brought to the notice of those classes of the community who hitherto have hardly had an opportunity even, it might be said, to acknowledge the debt of gratitude which many of them owe to our hospitals and dispensaries, or to contribute, even in a small way, toward their support. It places the claim of these institutions in a strong light before the public, and gives them, to a certain extent, a hold upon the popular sympathy which could not so easily be acquired in any other way.

It is interesting, in this connection, to read the comments of the English press upon the second anniversary of hospital Sunday in London, which was held on June 14th. So far as we are able to learn from latest advices, the result of this year's work has fallen far short of the liberal sum collected at the time the experiment was first tried in that city last year. It will be remembered that great dissatisfaction was expressed at that time at the manner in which the distribution of the money was made. Moreover, the movement, so far as London is concerned, does not appear to have the united support of the profession. It may be that there are difficulties attending

the management of a movement like this in great cities which are well nigh insuperable; but we do not think that this fact will detract in any degree from the general popularity which it now enjoys in England. Whether a charity of this kind can be transplanted successfully on to American soil is a question which the experience of the present year can hardly be said to have definitely settled. All honest efforts, however, to impress upon the mass of the community the importance of a hearty and general support of all charities of this class are well worth undertaking and should merit sympathy and respect from the profession.

The University Court of the University of Edinburgh has just added (June 10, 1874) a department of public health to the departments in which degrees of science may be obtained in that famous seat of learning. This department has been created owing to the great demand which now exists in Great Britain for medical officers of health. It is of importance that there should be some way of ascertaining what members of the medical profession have specially studied those branches of medical science which particularly relate to public hygiene.

Candidates for graduation in science in the department of public health must be graduates either of a British University or of such foreign or colonial University as shall be recognized by the University Court of the University of Edinburgh. Candidates, before receiving their degree, must have passed two examinations with an interval of at least five months between each. The first examination will embrace subjects relating to chemistry, physics, sanitary law and vital statistics; the second will relate to medicine and practical sanitation.

After the lapse of one year, bachelors of science in the department of public health can take the degree of doctor in the same department, provided they have, in the meantime, been engaged in practical sanitation.

The University of Edinburgh is to be congratulated on taking such a decided step for the promotion of a more thorough knowledge, among members of the medical profession, of matters which relate to public hygiene. Practical sanitation has thus far been thought of too little importance, and the number of medical men is small who know anything of the duties of public health officers in relation to drainage, sewerage, outbreaks of epidemic, contagious and infectious diseases, while very few possess a thoroughly practical knowledge of general sanitary laws.

Recent numbers of the *British Medical Journal* contain "The Hastings Prize Essay on the Pathology and Treatment of Ovarian Diseases, by Lawson Tait, F.R.C.S.," of which the following is an abstract:—

The essay begins with an account of the anatomy and physiology of the

ovary. The author holds that the gland has so much resemblance to the testicle in anatomical structure, physiological purpose, and pathological change, that we are justified in going back to the ancient notion that it is the *testis muliebris*. Even in their diseases, the testicle and ovary are closely analogous.

The most common diseases of the ovary are due to incomplete or perverted functions. As a rule, the gland is free from disease till after the age of puberty, when maturation of the ovum, and the possibility of its impregnation, occur. The chief external sign of this new function of the organism is the menstrual flow, but that this is no necessary part of the process is shown by the fact that some women have large families without ever having menstruated; that girls have become pregnant before the external signs of puberty have appeared, and that women sometimes become pregnant after the entire cessation of the monthly flow for years; so that the flow is an accompanying phenomenon, and not a cause or a result of the ovarian changes.

In healthy girls, the changes incident to puberty occur without suffering, usually at the fourteenth or fifteenth year; but in girls brought up in refinement, of delicate and strumous parentage, the moliminal change causes much trouble. As a rule, this seems to be due to the onset of menstruation, and the other signs of the change while the ovary is still in its infantile or incompletely developed condition; that is, it is forming incomplete cells, whose nuclei are incapable of fulfilling their functions, and the whole mechanism of ovulation is out of gear. In such cases, the menstrual flux comes on either at irregular times, or in insufficient quantity; or, if it comes regularly, it is over-abundant, and accompanied by severe ovarian pain. This arrest of development may be so complete that the ovaries may be said to be absent, though, in reality, the entire absence of the ovaries has been proved only in deformed fœtuses. Women in whom there is extreme arrest of ovarian development often partake in some degree of the characters of the opposite sex, especially in the growth of straggling tufts of hair on the upper lip and on the chin.

A greater number of cases have the arrest at a later stage, and in them menstruation is established, after much difficulty and suffering, between 16 and 19 years of age, and, though it may last with fair regularity, but deficient quantity, for four or five years, it then ceases completely. In many cases, however, if marriage occurs during the time that menstruation is in action, and if the patient becomes pregnant, a cure may result.

The majority of cases of this kind are afflicted to a less degree, and it is a singular fact that many of them are found in women of splendid physical development, who, to any but one well acquainted with such cases, look the most likely to possess a capacity for procreation. In these women, menstruation is established later than the normal time by a few months or a year or two. They have, at first, irregular times and much pain, but soon the flow is established normally, as to time and quantity, and with but little suffering. If they marry, their menstrual career may run an ordinary course, but, if they remain single, they in a few years suffer much from dysmenorrhœa, and undergo a premature climacteric change. Any chronic disease, overwork, mental anxiety or sudden fright will check their menstruation for months or years, or, perhaps, forever.

In these slighter cases of ovarian dysmenorrhœa, the uterus is generally normally developed, and it is often so in some of the severest cases.

The symptoms are sufficiently constant and distinctive.

The treatment in the milder cases is generally successful in mitigating the sufferings, and often the ovary may be made, even in well-marked cases of arrested development, to fulfil its functions completely. Iron stands at the head of all therapeutic remedies. In ovarian dysmenorrhœa, it is best given in intermenstrual periods in small doses, one to five drops of the liquor ferri perchloridi, well diluted, and increased suddenly to fifteen or twenty for a day or two previous and during the menstrual flow; or, better still, is the substitution of a large dose of an iron and aloes pill. Hot hip-baths, and leeches to the perinæum at the period are often useful additions, with an oc-

casional blister to the sacrum. Other means than these are only allowable in very obstinate cases, after the patient has been married, or when there are indications of premature ovarian atrophy. Marriage is, perhaps, the most efficient remedy. Mechanical irritation of the uterus is a most powerful aid, but it is not free from risk, and is of most advantage where the uterus is chiefly at fault. The author recommends for this purpose the insertion of Simpson's galvanic pessary.

The ovaries are liable to certain displacements, which may give rise to many disagreeable symptoms without any actual disease of the glands. They may drop into the retro-uterine *cul-de-sac*, and there cause much trouble. In such displacements, pressure on the gland gives rise to the same sickness and faintness as pressure on the testicle produces in the male, and the passage of a hard motion will sometimes cause the most alarming symptoms.

There is a large class of ovarian diseases, due to altered hæmic nutrition of the gland, which clinical experience shows to be far more common than pathological investigation has yet given evidence of. They may be divided into three groups, differing, probably, only in degree of severity, except where acute ovaritis has a specific origin. They are:—

1. Ovarian hyperæmia.
2. Chronic ovaritis.
3. Acute ovaritis.

Ovarian hyperæmia is the result of an over-sufficient and generally precocious ovarian activity, and is, therefore, the converse of the condition already described under ovarian amenorrhœa and dysmenorrhœa. It is far from being a rare affection, and its history is well marked, the chief detail of which is menorrhagia. There is hyperæmia not only of the ovary but of the whole sexual apparatus; the menstrual loss produces anæmia—the most serious result. Marriage, even without resulting pregnancies, seems to modify the menorrhagia.

The treatment of these cases should be begun in the first stage, if possible. There is no cause of deteriorated general health so certain for a young woman as profuse menstruation due to ovarian hyperæmia. Iron seems to have no control over the spanæmic condition, and all ferruginous preparations should be avoided until the menorrhagia has ceased. If the patient is at school, her education should be interrupted. Musical exercises are especially hurtful. Absolute rest is an essential, and the patient should be confined to the prone position for a few days before, during and after the catamenial flow. Counter-irritation over the ovarian region just before the period is useful; but the most potent part of the treatment consists in the administration of ergot before and during the period, and of bromide of potassium continually during the intermenstrual time. A favorite formula is half a grain of Bonjean's ergotin made into a pill with sufficient lupulin. The bromide is given night and morning, after meals, in doses of from five to ten grains. Much harm is done to many girls by their rigid social seclusion in youth from the companionship of boys. It may be a coincidence, but the author has noticed the affection under discussion chiefly in girls who have had no brothers. Ovarian hyperæmia sometimes results from marriage, but only when the marital acts have been indulged in to excess.

Chronic ovaritis may be a later stage of moliminal hyperæmia. It may also result from acute ovaritis, but in the majority of cases it occurs from sexual excess and masturbation, or as a sequela of exanthemata and rheumatic fever, and, probably, of syphilis. It is not an uncommon disease, often unilateral—invariably so, in the essayist's experience, as the result of acute septic ovaritis. When the result of sexual excess or moliminal hyperæmia, it is generally symmetrical.

The symptoms are, that from the molimen the periods have been irregular, generally too frequent and too profuse. If the affection has a subsequent origin, there is a history of a gonorrhœal affection, or a puerperal accident leading to an acute inflammatory attack, or an over-indulgence in sexual congress. There is always a sense of weight and fulness in the ilio-hypogas-

tric region. To these are added sickness and nausea, sick headache, tenderness on pressure over one or both ovaries, always increased about the time of the catamenial flow. Tactile examination shows the tenderness to be ovarian, and in very many cases the ovaries are found to be enlarged and tender.

The treatment should consist of organic and systemic rest during the menstrual periods and the administration of ergot. Between times, counter-irritation in the inguinal region is advantageous. This should be continued for months. Bromide of potash, arsenic and cod-liver oil are also of use.

Acute ovaritis is the result of three conditions only:—1. Injury. 2. Gonorrhœal infection. 3. Septic poisoning in the parturient condition.

It is quite often impossible to make a vaginal examination in acute ovaritis without anæsthesia, and this had better be used at once, for it is important to distinguish between acute ovaritis and pelvic cellulitis. The treatment consists in leeches to the perinæum, a blister over the ovary, diuretics and small, frequent doses of opium.

Hypertrophy of the ovaries occurs in two forms, as it affects the follicles of the gland or its fibrous tissue. Follicular hypertrophy probably forms a pathological feature of the ovarian hyperæmia already described. The fibrous hyperplasia seems to be especially frequent in the better ranks of life. It is probably very often the result of chronic ovaritis of a kind which attacks less the peritoneal surface of the gland and more its internal structure. It results in follicular atrophy, or arrest of development of the proper ovarian cells, and cirrhosis of the trabeculæ.

A small class of cases can only be classed under ovarian neuralgia. They are characterized by acute lancinating pain in the region of the ovaries, coming on paroxysmally, without reference to the ovarian functions. The patients have no signs of physical disease, but are approaching the menopause. They have all been addicted to over-indulgence in drink. In connection with this affection, the author strongly urges the medical profession to oppose the wrong women are often allowed to do themselves by taking spirits to relieve ovarian and menstrual pain. No habit can be more pernicious.

(To be continued.)

A CASE OF CAMPHOR-POISONING.—Dr. Edward Pollak *(Wiener Medizinische Presse)* has been induced, by noticing the report of a case of camphor-poisoning in a late journal, to publish the details of a case of this rare form of poisoning which came under his own observation. On the night of the 9th of May, 1874, he was called to a patient, and upon his arrival found a woman lying upon her back in bed and tossing her hands and feet uneasily about. Her face was strikingly pale, the eyes bright and shining, there was a moderate tension of the entire muscular system, and in the lower extremities slight cramps. The skin was cool but dry, the pulse strong and full, and beating 88 in the minute. The temperature was 48.4°C. A strong smell of camphor was perceptible in the expired air, and also upon that which was expelled by eructation. The patient was in full possession of her faculties, had vomited some warm milk which had been given her, and spoke in a low tone of voice. She complained of violent ringing in her ears, giddiness, oppression of the chest, a sense of fulness in the stomach, and, from time to time, of her legs falling asleep.

When the cause of her being in this condition was inquired into, it was found that the patient had taken two tablespoonfuls of camphor mixed with brandy and water. A short time after swallowing the dose she became unconscious, and after a time vomited five or six times, and among the matters which were thrown off in this way were found numerous pieces of camphor, of the size of a pea or a grain of Indian corn. She had taken the camphor upon the advice of a female friend, with the object of avoiding any further

increase in her family, as she already had four children. Dr. Pollak treated the case with irritating enemata and wine and coffee, and ordered the application of cold compresses to the head, and in a short time the patient fell asleep. She broke into a profuse perspiration, and passed a considerable quantity of clear urine, which had a distinct odor of camphor. The perspiration had no odor except that usually noticed. The nausea and the subjective symptoms noted above speedily ceased; but for nearly three weeks the patient had more or less muscular weakness, giddiness and gastric disorder, all of which symptoms, however, speedily yielded to treatment. The camphor did not effect the object with which it had been taken, for in due time the patient, then in full health, became for the fifth time a mother.—*Philadelphia Medical Times.*

The Hospitals.

MASSACHUSETTS GENERAL HOSPITAL.

(Tuesday and Saturday, June 23 and 27, 1874.)

OPERATIONS were performed in the following cases :—Tumor of lower jaw, Vesical Calculus, Nævus of Arm, Fistula in Ano (13 cases), Stricture of Urethra, Necrosis, Dislocation at Shoulder-joint. During the week, Sub-Mammary Abscess, Ruptured Perineum, Enlarged Tonsils.

Tumor of Lower-jaw.—A painless growth, of seven months' duration, in a man, fifty-five years old. It surrounded and involved the bone at the angle of the jaw, and made a firm swelling at that point, half the size of a hen's egg. A T-shaped incision was made through the skin and fascia overlying the tumor, the jaw exposed and sawed on each side. This section, including the tumor, was then removed by clearing its attachments to the floor of the mouth. The vessels were secured in the course of the dissection as they were cut.

Vesical Calculus—in a boy thirteen years old, a native, and for a while resident, of Glasgow, Scotland. He had passed a small stone when two years old, and while living there. The only symptom had been occasional attacks of retention, lasting from twelve to twenty-four hours. Lithotomy by the lateral method. Stone flat and nearly round; of the mulberry variety; weight, 137 grains.

Nævus of Arm—congenital, in a baby eight months old. It was of the size and shape of an almond, and situated at the bend of the elbow. Excised, and wound closed by silk sutures.

Fistula in Ano—of three years' duration, in a man forty-six years old. The integument of the left buttock was riddled with fistulous openings, communicating with sinuses that extended upward by the side of and into the rectum. The patient was a teamster, and had been in the habit of riding on the hard, jolting seat of a cart. Sinuses laid open.

Stricture of Urethra (operation for extravasation of urine, reported in JOURNAL for June 25th).—Perineal section was performed, and the entrance to the bladder found by following the fistula through which the urine passed. Another stricture of the urethra in front of the section was dilated, and a large, silver catheter passed into the bladder and left.

Fistula in Ano—in a man. Laid open.

Necrosis—in a man thirty-two years old. Carious portions of the tibia removed by the spherical rasp.

Fistula in Ano—in a man. Laid open.

Dislocation at the Shoulder-joint—sub-coracoid and of five weeks' duration, in a man fifty-one years old; the elbow projected from the side of the chest at an angle of about 30°, and the head of the humerus could be felt just below the coracoid process. The adhesions at the shoulder were ruptur-

ed by rotating and circumducting the humerus. Horizontal traction was applied for a few seconds; at the moment it was discontinued, the elbow was brought down to the chest over the operator's forearm as a fulcrum, and the dislocation reduced.

Sub-mammary Abscess—following confinement five months since. Opened, and a large amount of pus evacuated.

Ruptured Perineum—in a woman 27 years old. It occurred during her first confinement, and involved the recto-vaginal septum, preventing her from retaining the contents of the bowels. The perineum was restored by dissecting off the membrane covering the border of the fissure and for a space of half an inch on each side of it; the raw surfaces were united by one deep and fifteen superficial wire sutures.

Enlarged Tonsils—in a child three years old, accompanied by unusually severe disturbance of respiration at night. H. H. A. BEACH.

Correspondence.

THE POSITION OF DELEGATES TO STATE MEDICAL SOCIETIES.

MESSRS. EDITORS,—At the meeting of the Massachusetts Medical Society, holden at Boston on the 3d instant, I listened a few minutes to an outside discussion upon the subject of sending delegates from one State medical society to another. There were three or four members thus engaged in the subject, all strangers to the writer; and the particular point on which the discussion seemed to hinge was this—when and where did the system of sending accredited delegates from one State society to another begin? It is a matter of but little interest to the profession at large when and by whom the thing originated, so long as it forms an interesting and profitable medium, half professional and half social, by which the friendly relations of one society with another may be made more harmonizing, and their professional interests promoted. Now, I feel it to be a very easy task to ascertain the true status of the case.

I would not have troubled you in relation to the matter, had the gentlemen who were so warmly discussing the question treated me with a degree of professional courtesy. It was evident, from their conversation, that they knew but little about the matter themselves, and they very abruptly doubted my knowing anything about it.

I propose to say something I *do know* in relation to the subject, and then, if I do not correctly state the facts, the records of some one or all of the State societies, when compared, will put the case right.

I simply stated to them, after being for some little time a silent listener, that I was very sure that the system was first introduced by an act of the "Rhode Island Medical Society"; they all made answer abruptly, "they knew better than that," and I left them to themselves.

Since that time, I have looked over some of my old papers, and I found an original preamble and resolution, now lying before me, which was prepared and presented by the writer, and unanimously adopted by a State medical society; and, as I was secretary *pro tem.* of that meeting, will give it as it was written upon the records of the meeting; but, as I have scarcely seen or examined those records since, I am unable to say whether or not there is any alteration or abridgment as they now stand in the records, but I give them as written originally, prefaced in the records as follows:—

"At the semi-annual meeting of the Rhode Island Medical Society, holden at Providence, Oct. 2, 1861, the following preamble and resolution were unanimously adopted:—

"Whereas, It is desirable to cultivate the most friendly relation among our State medical societies, particularly in New England, and recognizing the appointment of delegates from one society to another as an important means of promoting such relations, therefore

"*Resolved*, That Dr. Edwin M. Snow, of Providence, be, and he is hereby appointed a delegate from this Society to attend the annual meeting of the Vermont Medical Society, to be held at Montpelier, on the 23d instant, and that delegates be appointed to other State medical societies.

Signed D. HOMER BATCHELDER,
Sec. pro tem."

Now, what followed the passage of the above resolution? Why, there was at once a general response from nearly every New England State society to the sentiment embodied in the above preamble and resolution; and Dr. Edwin M. Snow, of Providence, was the first accredited representative from one State society to another, legitimately appointed, known to the writer.

It is to be recollected that the above action took place at the semi-annual meeting in October, 1861, and other delegates were elected to attend the annual meetings of all the New England State medical societies for the year 1862. Dr. Snow was, from unavoidable circumstances, unable to attend in person the annual meeting at Montpelier, Vt., in October, 1861, but sent his credentials in a letter, giving his reasons for non-attendance; but his letter and certificate were not presented until the semi-annual meeting was in session at St. Albans, June 18 and 19, 1862, at which meeting the Massachusetts Medical Society was also represented by Dr. Benj. E. Cotting.

A delegate—I think Dr. Sylvanus Clapp, of Pawtucket, R. I.—was the first elected to the Massachusetts Medical Society, and one, I think Dr. Usher Parsons, to the Connecticut Society, and the writer to the New Hampshire State Society at Concord. The meeting of the Massachusetts Medical Society was holden first of the series, and the delegate from Rhode Island attended, and was received with much favor, so much so that the Society responded at once by appointing a full corps of delegates to New England medical societies.

The meeting of the New Hampshire Medical Society was held on the 3d of June. I appeared there to represent the faculty of Rhode Island, and, to my astonishment, I met my old friend, Dr. Enos Hoyt, of Framingham, and Dr. C. A. Savory, of Lowell, who were to represent the faculty of Massachusetts, and we were all courteously received; while the Society reciprocated by the appointment of a full complement of delegates to the other State societies.

I was obliged to return to Providence the same night, in order to be at our own meeting on the 4th, at which meeting the first delegates from the Massachusetts Medical Society were present. They were Drs. Foster Hooper, D. H. Storer and Benjamin E. Cotting.

Thus commenced the system of professional interchange of civilities, which, it is to be hoped, will eventually lead to an established principle of united coöperation by all the State societies in behalf of "medical science."

The writer's opinion is, that in no instance, prior to 1861, has a "medical society" been represented in other similar bodies otherwise than by *special invitation* or *voluntary attendance*.

I have thus stated, rather in a hurried manner, from recollection only, when and where the first legitimate action was taken; and if, in doing so, I have erred in any one thing, I desire that it may be attributed to a faulty recollection rather than intention, hoping that some kind brother will volunteer to make the corrections.

With respect, I am yours fraternally, D. HOMER BATCHELDER.
Danversport, June 14, 1874.

THE OBSTETRIC BINDER.

PAWTUCKET, R. I., June 15.

MESSRS. EDITORS,—I noticed in your last number (June 11th), a communication from Dr. E. T. Williams, of Roxbury, in which he recommends a twisted sheet tied together at the ends, and used in the following manner as a convenient and ready means of expediting labor: "Put the feet into the loop at the lower end and push, grasp the other end with the hands and pull."

About a year ago, I was attending a French woman in labor with her first child.

The labor had continued for several hours, when an old French woman, standing by, asked me if she might put the patient into the "*swing.*" I did not know what she meant by a "swing," but gave my consent, curious to see what might be done. A rope, of sufficient length to pass below the patient's feet, was produced, the ends of which were tied to the bedposts above the head. A board to support the feet was placed in the loop below. Two napkins were placed upon either side of the rope, just below the hips, to protect the hands from the rough rope, and the patient, when "put into the swing," was directed to "push and pull."

I asked the old lady where she had learned to do this. She said it was the way the midwives did in the southern part of France.

Pleased with the seeming efficacy of this simple plan, I have resorted to it several times since, using, in place of the rope, a twisted sheet or a long towel in the same manner as Dr. Williams recommends.

I have often wondered why something about this has not been written in our works upon Obstetrics, as I have never seen anything about it in print, or heard it mentioned by any physician until I read the communication of Dr. Williams, to whom I cheerfully accord the credit of having first placed the use of this simple, but at the same time valuable, contrivance before the public. In several instances where it has seemed to me that the forceps would have to be resorted to, labor has been completed by the use of the *modified* "swing." In those cases where the expulsion of the placenta is tardy, I would advise the physician to try the above before resorting to either manual or instrumental interference.

Respectfully yours,

PHANUEL E. BISHOP, M.D.

BOSTON, June 16, 1874.

MESSRS. EDITORS,—Dr. Williams's "substitute for a binder" is, as he himself suggested, not a new thing. There is an apparatus, consisting of leather straps, made with padded handles and stirrups, which enables a woman to pull against herself most readily and comfortably. Some nurses have them to carry with them to any case of labor they may be called upon to attend.

H. T.

A CASE OF DISLOCATION OF THE SHOULDER.

HOOKSETT, N. H., June 22, 1874.

MESSRS. EDITORS,—I was called to see a woman, thirty-two years of age, of strong constitution, and in good health, for some trouble with her shoulder, and learned the following history in regard to it.

About fifteen years ago, her right shoulder was hurt, and kept her from work for two weeks. There were no signs of fracture or dislocation. Three months ago, by accident, she hurt the same shoulder, and experienced slight pain from it, but was not kept from ordinary house-work until about three weeks ago, when she began to lose freedom of motion, and felt numbness of hand and arm, slowly increasing, with slight pain and growing deformity of shoulder. There was no marked swelling during this time, nor when I first saw the patient.

Upon examination, I found a dislocation downwards, for which the history seemed to afford no direct or exciting cause. She could not tell any particular time when it happened, nor had she any idea how long her arm had been out of joint, or that it was out of joint at all.

I invited Dr. John Kimball, of Suncook, to see the case. He confirmed my diagnosis. We etherized the patient, and reduced the dislocation by manipulation; so easily, that the only proof of reduction was the absence of deformity. Proper bandages were applied, and, contrary to expectation, there resulted but little pain and no swelling. Five days after, upon removing the bandages, the use of the arm was fully restored.

ALVAH M. DAM, M.D.

Medical Miscellany.

THE NORTH-WESTERN MEDICAL AND SURGICAL JOURNAL discontinues its publication with the June number of the present year.

THE four members of the Massachusetts Medical Society who are reported to have offered resolutions, or to have been put on committees of the American Medical Association, were none of them present at the meeting.

SOOTHING APPLICATION IN HERPES ZOSTER.—

℞. Collodion, ℥j.;
Morphiæ muriatis, gr. viij. M.

To be painted over the vesicles without breaking them open.—*Medical Times.*

COCCULUS INDICUS.—The *London Pharmaceutical Journal* states that there are at present about twelve thousand pounds of this poisonous drug in the London market, and inasmuch as there is no legitimate use for the article, the inquiry is, for what purpose is it to be employed. It is intimated that the brewers might be able to throw some light on the subject.

FORMULA FOR HAY FEVER.—

℞. Potassæ chloratis, gr. xx.;
Morphiæ sulphatis, gr. iv.;
Aquæ destillatæ, ℥ij. M.

This mixture, to be used by means of the atomizer, is recommended by Dr. Hoover as giving immediate relief, and producing a complete cure within a few days.—*American Journal of the Medical Sciences.*

TOPICAL APPLICATION IN PAINFUL DENTITION.—

℞. Syrup of tamarinds, ℥ijss.;
Infusion of saffron, ℈ij.;
Honey, ℥ijss.;
Tinct. (essence) of vanilla, gtt. iv. M.

Rub gently over the gums with the finger or rag.

An application of a similar character is the following:—

℞. Saffron (powdered), 4 to 6 grs.;
Honey, 2 to 3 drachms. M.

Glycerine may be substituted for the honey.

MORTALITY IN MASSACHUSETTS.—*Deaths in Sixteen Cities and Towns for the week ending June 27, 1874.*

Boston, 135; Worcester, 11; Lowell, 15; Milford, 2; Chelsea, 4; Salem, 11; Lawrence, 9; Springfield, 12; Lynn, 7; Gloucester, 3; Fitchburg, 4; Newburyport, 8; Somerville, 11; Fall River, 18; Haverhill, 4; Holyoke, 2. Total, 256.

Prevalent Diseases.—Consumption, 40; pneumonia, 11; scarlatina, 10.

F. W. DRAPER, M.D.
Secretary pro tem. of the State Board of Health.

DEATHS IN BOSTON for the week ending Saturday, July 4th, 143. Males, 73; females, 70. Accident, 5; apoplexy, 3; inflammation of the bowels, 4; disease of the bowels, 1; disease of the bladder, 1; bronchitis, 6; congestion of the brain, 3; disease of the brain, 5; cerebro-spinal meningitis, 1; cancer, 4; cholera infantum, 6; consumption, 21; convulsions, 8; debility, 5; diarrhœa, 5; drowned, 2; dysentery, 2; erysipelas, 1; typhoid fever, 5; gastritis, 3; disease of the heart, 5; malformation of the heart, 1; hæmorrhage, 1; intemperance, 2; disease of the kidneys, 6; disease of the liver, 2; congestion of the lungs, 1; inflammation of the lungs, 14; marasmus, 4; measles, 1; old age, 3; paralysis, 2; pleurisy, 2; peritonitis, 2; puerperal disease, 1; sunstroke, 2; whooping cough, 3; unknown, 1.

Under 5 years of age, 54; between 5 and 20 years, 13; between 20 and 40 years, 32; between 40 and 60 years, 21; over 60 years, 23. Born in the United States, 77; Ireland, 45; other places, 21.